

Yellow Shell (*Camptogramma bilineata* L.), the latter also being recorded at Pig Bush. A search of the wild rose bushes on the outskirts of Brockenhurst revealed some Gold-tail larvae (*Euproctis similis* Fuessly) and the only Cinnabar (*Tyria jacobaeae* L.) was flying in the village. To complete the moths, an individual glimpsed briefly in Pignal Inclosure was almost certainly a White Ermine (*Spilosoma lubricipeda* L.) although the Muslin (*Diaphora mendica* Clerk) was a possibility.

I also noted any dragonflies seen and the following list was much reduced by weather conditions and by the fact that no ponds were visited. The species seen, in order of abundance, were: *Orthetrum coerulescens* F., *Pyrrhosoma nymphula* Sulzer, *Agrion virgo* L., *Enallagma cyathigerum* Charpentier, *Cordulegaster boltonii* Donovan, *Sympetrum striolatum* Charpentier, *Platycnemis pennipes* Pallas and *Ceriagrion tenellum* de Villiers with only one sighting of each of the last two. *C. tenellum*, which is a protected species in the forest, was on bog myrtle near an overgrow stream and the delicate *P. pennipes* in a wood east of Brockenhurst well away from water. On one occasion a specimen of the spectacular *C. boltonii* settled on a piece of wood in a forest ride, and was watched at close range for several minutes. *O. coerulescens* was easily the most numerous species, often alighting on the heather after making short flights. Nearly all were females. It is highly probable that *Coenagrion puella* L. occurs in the same area at Bishop's Dyke as *E. cyathigerum*, but I saw only the latter for certain. As already mentioned, excellent localities for dragonflies like Sowley Pond and Eyeworth Pond were not visited on this occasion and, undoubtedly, several species would have been added from these different habitats. — G. SUMMERS, 23 West Close, Stafford ST16 3TG.

HUMMINGBIRD HAWKMOTH (MACROGLOSSUM STELLATARUM L.) OVIPOSITING ON THE DORSET COAST, AUGUST 1978. — On 10th August, a female was observed at 6 p.m. ovipositing whilst hovering over its selected foodplant, grasping the foliage with its legs, before quickly and accurately bending its abdomen to deposit a single green, typical Sphingid ovum. The female was observed for several minutes and five ova were located, three being laid on Wild Madder (*Rubia peregrina*), one on Heath Bedstraw (*Galium saxatile*) and the fifth on Sphagnum moss, close to its food source. The captive larvae are feeding well on Common Cleavers (*Galium aparine*). — K. J. WILLMOTT, 34 Daybrook Road, Merton Park, London, SW19 3DH.

MORTALITY OF *PIERIS BRASSICAE* L. RACE *CHEIRANTHI* HUBN. WHEN REARED ON BRASSICAE. — I was interested to read Anthony Valletta's note on *cheiranthi* in the *March Record*. I would not however agree with his conclusion that "*P. cheiranthi* may also do well on *Cruciferae*". From his own data, it clearly did *not* do well, having a high larval and pupal mortality. What is so interesting, however, is that some 15 years after my own experiences with *cheiranthi*, the larvae still show the same high mortality when fed *Brassicae* species

as opposed to *Tropaeolum*. This result was published by David, Gardiner and Clothier, in 1968. As an example, when, over a period of three years the larvae from *cheiranthi* egg-batches were reared half on Nasturtium and half on Cabbage, then, of the 1,157 total larvae reared on Nasturtium, only 2.51% died of virus disease whereas 19.68% of the 1,306 reared on Cabbage (*Brassicae oleracea*) died. On many occasions also when Nasturtium only was being used as food the mortality was nil. It needs to be emphasised, however, that the larvae were being reared at the very low density of not more than 10-12 per cubic foot. Any attempt to use the high density rearing technique in use for typical Cambridge *brassicae*, usually several hundred larvae per cubic foot, would result in very high mortality. Although *cheiranthi* also lays its eggs in batches of similar size to typical *brassicae*, the use of Nasturtium with the growth characteristics which it has, must inevitably lead to a far greater scattering of the larvae than would occur on a compact cabbage plant, and, indeed the *cheiranthi* feeding pattern observed on potted (but small) plants lends credence to this.

It would be interesting to hear of any field observations on the natural larval feeding densities of *cheiranthi* in the Canary Islands. From scattered reports I have had, the larvae are few and far between.

It is well worth reporting too, that not only can *cheiranthi* be reared on the same artificial diet on which so many species of Lepidoptera can now be successfully raised (Gardiner, 1974, 1978), but that even when this is cabbage flavoured by the addition of 1.8% dried cabbage leaf powder, the mortality from disease among some 2,000 larvae raised remained at zero. The dried cabbage leaf powder used in the diet was, it should be remembered, from the same kind of cabbages on which nearly 20% disease mortality occurred. The reason for this is not obvious, but it could well be that feeding on artificial diet is less of a stress—which is known to induce latent viruses to outbreak proportions—than is the stress produced by cabbage as opposed to the normal food Nasturtium. It may well be due to differences in the nitrate and water content of the respective leaves.

Incidentally, while Nasturtium (*Tropaeolum majus*) may have affinities with the Geraniaceae, it is *not*, as stated by Mr. Valletta, a member of that family, but of the Tropaeolaceae (Willis, 1976). References: David, W. A. L., Gardiner, B. O. C. & Clothier, S. E. (1968). Laboratory breeding of *Pieris brassicae* transmitting a granulosis virus. *J. Invert. Pathol.*, **12**: 238-244. Gardiner, B. O. C. (1974). Food for Caterpillars. *Nat. Sci. in Schools*, **12**: 8-10. Gardiner, B. O. C. (1978). The preparation and use of artificial diets for rearing insects. *Ent. Rec. and J. Var.*, **90**: 181 *et seq.* Willis, J. C. (1976). *A dictionary of the flowering Plants and Ferns*. Cambridge. U.P. — B. O. C. GARDINER, A.R.C. Unit of Invertebrate Chemistry and Physiology, Dept. of Zoology, Downing Street, Cambridge.